

Geovista Dual Density Logging Tool



This combinable sonde is suitable for quantitative formation density measurements in uncased holes. It uses a gamma ray source and a set of two detectors at different spacing to detect the gamma rays scattered by the formation.

The amount of scattered gamma rays is a function of the electron density of the formation material and hence, a function of its bulk density. This relationship is used to calibrate the density sonde and then use it to log the bulk density of the formations crossed by the borehole.

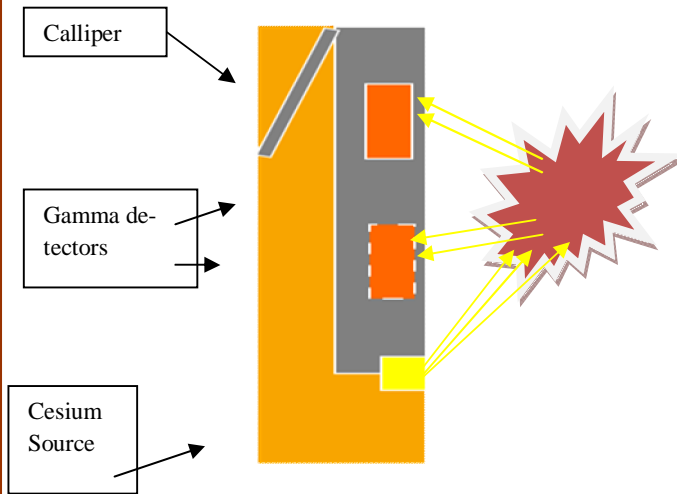
In order to optimise performance, the sonde is designed with three main features

1. A side-walling calliper to ensure that the detector measures only the radiation scattered by the formation.
2. A detector mandrel diameter that is large enough to minimise the sonde and borehole curvature mismatch and improve sonde to formation contact to minimise the effect of the borehole fluid.
3. An efficient detector shield to prevent gamma rays from travelling up, inside the sonde body.

Peter Bowman
Operations Manager
ABIM Solutions
130 Fauntleroy Avenue,
Redcliffe WA 6104
Mob: +61 4577 57194
pbowman@abims.com.au
www.abims.com.au



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Area of Compton scattering where Gamma rays interact with electrons in the formation by way of inelastic collisions. As the electron density of the formation increases the attenuation of the gamma rays increase due to the higher probability of collision. Since electron density and bulk density are directly related, a reduced proportion of gamma rays are reflected back to the gamma detectors as formation density increases.

Specifications:

Length/Weight/Diameter:	2.06m/26Kg/54mm
Source-Detector Spacings:	25cm/47cm
Density Range :	1 - 3.5g/cc
Calliper Range:	60 - 350mm
Radioactive Source:	Cesium 137 100mCi
Maximum Temperature:	80°C
Maximum Pressure:	20 MPa

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